Title (en)

Linear and angular position sensor

Title (de)

Linear- und Winkelpositionssensor

Title (fr)

Capteur de positions linéaire et angulaire

Publication

EP 0800055 A1 19971008 (FR)

Application

EP 97400736 A 19970401

Priority

FR 9604176 A 19960403

Abstract (en)

The position sensor has a casing(1) and a disc casing(6) surrounding a common axis(2), either one of the casings(1,6) can enclose the other with an airgap(e) between their respective mutually opposite faces. The two casings are movable with respect to each other, by rotation(4) around the axis(2) and/or linearly(5) along the axis(2). One of the casings(1) has a magnet(7) with an axial revolution surface(8) having a axial variable diameter. The other casing(6) has a flux return ring fitted with at least two probes(9,10) separated from each other by an angular distance which is a function of the number of pole pairs of the magnet. A first probe(9) is fitted on the part of the disc(6) crossed by a return magnetic flux which is at a minimum when the magnet and the disc are at a reference angular position with respect to each other and being designed to supply a variable output signal which is a function of the mutual rotation of the two casings. A second probe(10) is fixed on the disc part crossed by the return magnetic flux which is at its maximum when the disc and magnet are in another angular reference position and is designed to supply a variable signal which is a function of the value of the airgap which itself varies as a function of the mutual axial position of the two casings.

Abstract (fr)

Capteur de positions linéaire et angulaire, comportant une première et une seconde carcasses (1, 6) de révolution autour d'un axe commun (2), une carcasse entourant l'autre en définissant un entrefer (e), ces carcasses étant mutuellement déplaçables en rotation (4) autour et/ou linéairement (5) le long de l'axe ; une carcasse (1) comportant un aimant (7) à surface axiale de révolution (8) ayant un diamètre variable axialement, l'aimantation étant radiale ou diamétrale ; et l'autre carcasse (6) comportant une bague de retour de flux avec deux sondes (9, 10) en regard de l'aimant (7) et écartées angulairement en fonction du nombre des pôles de l'aimant, une sonde (9) étant située sur une partie de la bague traversée par un flux magnétique de retour qui est minimum en position centrée et fournissant un signal fonction de la rotation mutuelle des deux carcasses, et une sonde (10) étant située sur une partie de la bague traversée par un flux magnétique de retour maximum en position centrée fournissant un signal fonction de l'entrefer qui varie selon la position axiale mutuelle des deux carcasses. <IMAGE>

IPC 1-7

G01B 7/14; G01B 7/00; G01D 5/20

IPC 8 full level

G01B 7/02 (2006.01); **G01B 7/14** (2006.01); **G01B 7/30** (2006.01); **G01D 5/14** (2006.01)

CPC (source: EP)

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Citation (search report)

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